

CLAIMS

What is claimed is:

1. A composition comprising bitumen and products obtained by reacting a resin with
5 an amine.
2. The composition of claim 1 further comprising a polymer.
3. The composition of claim 2 wherein polymer comprises at least approximately 3
10 % of the composition by weight.
4. The composition of claim 2 wherein said polymer comprises styrene.
5. The composition of claim 4 wherein said polymer comprises SBS.
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6. The composition of claim 1 wherein said resin comprises pentaerythritol ester of
rosin.
7. The composition of claim 1 wherein said products comprise an amide.
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8. The composition of claim 1 wherein said products comprise an alcohol.
9. The composition of claim 8 wherein said alcohol comprises a polyol.
10. A composition comprising bitumen, polymer, and products obtained by reacting a
25 rosin ester with an amine, wherein said products comprise an alcohol and an amide.
11. The composition of claim 10 wherein said composition is an emulsion.

12. A method of incorporating polymer into a bitumen emulsion comprising the steps of:

combining bitumen, polymer, resin and amine to form a pre-mix;

heating the pre-mix to a temperature sufficient to react the resin and the

5 amine to form reaction products; and

mixing the reacted pre-mix with a bitumen emulsion.

13. The method of claim 12 wherein the resin comprises a rosin ester.

10 14. The method of claim 13 wherein the rosin ester comprises a pentaerythritol ester of rosin.

15. The method of claim 12 wherein the polymer comprises styrene.

15 16. The method of claim 15 wherein the polymer comprises SBS.

17. The method of claim 12 wherein the reaction products comprise an alcohol.

18. The method of claim 17 wherein the alcohol comprises a polyol.

20 19. The method of claim 12 wherein the bitumen emulsion comprises an emulsion selected from the group consisting of cationic, nonionic, and anionic emulsions.

20. The method of claim 12 wherein the mixing step comprises low shear mixing.

25 21. A method of reducing the viscosity of a composition comprising bitumen and polymer, the method comprising the steps of:

adding a resin and an amine to the composition; and

reacting the resin and the amine to form reaction products, the reaction

30 products comprising a viscosity reducer.

22. The method of claim 21 wherein the viscosity reducer comprises an alcohol.
23. The method of claim 21 wherein the viscosity reducer comprises a polyol.
- 5 24. A composition comprising bitumen, polymer and products obtained by reacting a resin with an amine, wherein low shear mixing of said bitumen, polymer and products forms a stable bitumen emulsion.
- 10 25. The composition of claim 24 wherein said polymer comprises styrene.
26. The composition of claim 25 wherein said polymer comprises SBS.
27. The composition of claim 24 wherein said resin comprises a rosin ester.
- 15 28. The composition of claim 27 wherein said rosin ester comprises a pentaerythritol ester of rosin.
29. The composition of claim 23 wherein said products comprise an alcohol.
- 20 30. The composition of claim 29 wherein said alcohol comprises a polyol.